

REMARKS

Claims 2-4 and 11-17 are all the claims pending in the application.

Applicants thank the Examiner for accepting the drawings submitted on October 26, 2006. Applicants also thank the Examiner for considering the references cited with the Information Disclosure Statement filed on September 11, 2006.

Claim Rejections - 35 U.S.C. § 103

Claims 2-4 and 11-17 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,727,310 to Casson *et al.*; hereinafter “Casson”, in view of U.S. Patent No. 6,670,559 to Centola *et al.*; hereinafter “Centola”. For *at least* the following reasons, Applicants respectfully traverse the rejection.

Claims 2-4 and 12-17

Applicants respectfully submit claim 2 is patentable over the combination of Casson and Centola. For example, claim 2 recites a circuit board comprising, *inter alia*, a first substrate including, on a surface thereof, a first group of electrode terminals *arranged in a matrix*, and a pressurizer pressurizing the first substrate, an anisotropic electrical conductor, and a second substrate *causing the first substrate, the anisotropic electrical conductor, and the second substrate to electrically connect to each other*. The Examiner, in maintaining his rejection from the previous Office Action (Non-Final Office Action dated July 28, 2006), contends that in figure 2 of Casson, the double-sided circuit board 70 suggests the first substrate, and the

conductive layer 72 formed on the bottom surface of the double-sided circuit board 70 suggests the first group of electrode terminals arranged in a matrix.

The Examiner admits that Casson does not disclose or suggest a pressurizer as set forth in claim 1, and relies on Centola to disclose this feature. Specifically, the Examiner alleges that the U-shaped device 400 of Centola which serves as an electromagnetic edge shield on a printed circuit board corresponds to the pressurizer of claim 1 (*see* Centola: figure 4). Moreover, the Examiner contends that it would have been obvious to one of ordinary skill in the art to implement the U-shaped device 400 of Centola into the multi-layer circuit board 100 of Casson, and such an implementation would cause the double-sided circuit boards 70, 75 and anisotropic conductive adhesive 95 between the circuit boards 70, 75 to electrically connect to each other.

In Applicants' previous Amendment filed October 26, 2006, Applicants stated that since the U-shaped device 400 serves as an electromagnetic edge shield, and at most, provides a stiffening component for the circuit board, Centola does not disclose or suggest the U-shaped device 400 acts as a pressurizer to pressurize the first substrate, the anisotropic electrical conductor, and the second substrate such that they electrically connect to each other. Applicants further stated that the Examiner is using hindsight in Applicants' own disclosure in an effort to incorrectly transform the U-shaped device into a pressurizer. In response to the Applicants' arguments, the Examiner contends that a skilled artisan would be motivated to place the U-shaped device 400 of Centola on Casson's multi-layer circuit board 100 to provide edge shielding. The Examiner further asserts that the U-shaped device 400 provides a pressurizing effect, and thus the skilled artisan would instantly recognize that providing the U-shaped device

400 of Centola into the multi-layer circuit board 100 of Casson would result in pressurizing the double-sided circuit boards 70, 75 and anisotropic conductive adhesive 95 between the circuit boards 70, 75 to electrically connect to each other. (Office Action, page 7). Applicants respectfully submit that the Examiner is misinterpreting and/or misapplying the teachings of the references.

For instance, the U-shaped device 400 in Centola does not disclose, or suggest the pressurizer as set forth in claim 1. Centola states that the U-shaped device 400 is secured to a printed circuit board (PCB) to provide a cover for a first edge portion of the PCB, and that *the U-shaped device 400 is electrically coupled to a ground layer within a substrate of the PCB* to prevent electromagnetic radiation from being emitted from the first portion (Centola, figure 4, col. 2, lines 29-38). Centola further discloses that *the U-shaped device 400 and the ground layer 110 are electrically coupled* by engaging the terminal parts of the U-shaped device 400 to vias 200 surrounding the electronic board in figure 4 of Centola. In various other embodiments of the U-shaped device of Centola, such as the one illustrated in figure 9, Centola, at most, discloses that the electrical contact *between the U-shaped device 400' and the PCB 100* is obtained by using pressure (Centola, col. 4, lines 60-65, and co. 5, lines 8-15). Nonetheless, Centola's disclosure is *restricted to electrical contacts between the U-shaped device 400 and the ground layer 110 of the PCB 100 or the PCB 100 itself*. However, Centola does not disclose, teach, or suggest that the U-shaped device 400 or the U-shaped device 400' pressurizes layers within the PCB such as the ground layer 110, voltage layer 120, and signal layer 130 (illustrated in figure 4

of Centola) *causing the layers within the PCB* to electrically connect to each other (Centola, figure 4).

Moreover, Casson discloses that the electrical connections in its multi-layer circuit board 100 (figure 2 of Casson) are firmly secured in place (Casson, col. 15, lines 10-17). As such, a skilled artisan would already be aware that the electrical connections between the double-sided circuit boards 70, 75 and anisotropic conductive adhesive 95 in Casson's multi-layer circuit board 100 are well secured, and therefore, adding the U-shaped device 400 from Centola to the multi-layer circuit board 100 of Casson would *not* result in a perceptible difference in the strength of the electrical connections between the double-sided circuit boards 70, 75 and anisotropic conductive adhesive 95.

Furthermore, Applicants respectfully submit that Casson does not disclose a first substrate including, on a surface thereof, a first group of electrode terminals *arranged in a matrix*. As noted earlier, the Examiner contends that the conductive layer 72 formed on the bottom surface of the double-sided circuit board 70 suggests the first group of electrode terminals arranged in a matrix. However, Casson, in figures 1A-1B discloses that on each side of the double-sided circuit boards 70, 75, for example, the double-sided circuit board 70, conductive layers 15, 20 are formed thereon. The conductive layers 15, 20 have patterns 16, 21 of various interconnecting lines defined on the top and bottom side of the insulator substrate of the circuit board 70. These substrates further have contact pads 40, 45, 50, 55, and 60 for electrically connecting the conductive layers to another conductive layer located on another circuit layer (Casson, col. 10, lines 6-20). However, neither the contact pads 40, 45, and 50 or

the contact pads 55, and 60 as shown in figure 1A and figure 1B of Casson, respectively, are *arranged in a matrix* as set forth in claim 1. At most, as discussed above, Casson discloses that these contact pads lie on the patterns 16, 21, but there is no disclosure or suggestion in Casson that such patterns are in the form of a matrix and nor is such an arrangement of the contact pads illustrated in the figures of Casson. As such, Casson does not disclose or suggest a first substrate including, on a surface thereof, a first group of electrode terminals *arranged in a matrix*.

In light of the discussion above, Applicants respectfully submit that Casson and Centola, alone, or in combination, do not disclose, teach, or suggest the above noted features of claim 1 in as complete detail as set forth in the claim. Therefore, Applicants respectfully request the Examiner to withdraw the 35 U.S.C. § 103(a) rejection.

Since claims 3-4 and 12-17 depend upon claim 2, which has been shown to contain patentable subject matter above, Applicants respectfully submit claims 3-4 and 12-17 are patentable *at least* by virtue of their dependency.

Claim 11

Claim 11 recites features similar to the above noted features of claim 1, i.e., claim 11 recites a method of connecting a first substrate including, on a surface thereof, a first group of electrode terminals *arranged in a matrix*, and a second substrate, comprising, *inter alia*, attaching a pressurizer pressurizing the first substrate, an anisotropic electrical conductor, and a second substrate *causing the first substrate, the anisotropic electrical conductor, and the second substrate to electrically connect to each other*. As such, Applicants respectfully submit claim 11 is patentable *at least* for reasons analogous to those given above with respect to claim 11.

RESPONSE UNDER 37 C.F.R. § 1.116
U.S. Application No. 10/519,002

Attorney Docket No.: Q85618

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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